





HANDRAIL INSTALLATION ON CONCRETE STEPS

## HANDRAIL GENERAL NOTES

- 1. PIPE HANDRAIL IS TO BE PAINTED BLACK IN COLOR AND ADHERE TO FEDERAL SPECIFICATION TT-E-489H
- 2. THIS PIPE HANDRAIL IS TO BE USED ONLY AS A PROTECTION FOR PEDESTRIANS AND SHOULD NOT BE PLACED IN ANY LOCATION WHERE IT MIGHT BE SUBJECT TO VEHICULAR IMPACT. FOR VEHICULAR PROTECTION STANDARD GUARD RAIL SHOULD BE USED.
- 3. THE PIPE HANDRAIL SHALL BE REQUIRED WITH FOUR OR MORE STEPS AND WILL MEET THE FOLLOWING CONDITIONS:

  A. ON STEPS LESS THAN 44 INCHES WIDE HAVING BOTH SIDES ENCLOSED, AT LEAST ONE HANDRAIL PREFERABLY ON THE RIGHT SIDE DESCENDING.
  - B. ON STEPS LESS THAN 44 INCHES WIDE HAVING ONE SIDE OPEN, ONE HANDRAIL ON EACH SIDE.
  - C. ON STEPS LESS THAN 44 INCHES WIDE HAVING BOTH SIDES OPEN, ONE HANDRAIL ON EACH SIDE.
  - D. ON STEPS MORE THAN 44 INCHES WIDE BUT LESS THAN 88 INCHES WIDE, ONE HANDRAIL ON EACH SIDE.
    E. ON STEPS 99 OR MORE INCHES, ONE HANDRAIL ON EACH SIDE, AND ONE INTERMEDIATE HANDRAIL LOCATED APPROXIMATELY MIDWAY OF THE WIDTH.

## CONCRETE STEP GENERAL NOTES

- 1. FOR SPECIFICATIONS SEE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION.
- 2. CONCRETE STEPS MAY BE CAST IN PLACE OR PRECAST. ALL CONCRETE CAST IN PLACE TO BE CLASS "A". ALL PRECAST TO BE 4000 POUNDS PER SQUARE INCH.
- 3. ALL EXPOSED EDGES ARE TO BE ROUNDED USING A QUARTER INCH RADIUS.
- 4. THE TREAD IS TO BE ELEVEN TO FIFTEEN INCHES DEEP. THE RISER HEIGHT IS TO BE VARIED SO AS TO CONFORM TO THE PROPOSED SLOPE. A MAXIMUM RISER HEIGHT OF SEVEN INCHES IS NOT TO BE EXCEEDED.
- 5. CONCRETE JOINT MATERIAL TO BE 0.5" PREMOLDED FIBER IN ACCORDANCE WITH SECTION 905 OF THE STANDARD SPECIFICATIONS. COST OF JOINT MATERIAL WILL BE INCLUDED IN THE COST OF OTHER ITEMS.
- 6. ALL REINFORCING STEEL TO ADHERE TO SPECIFICATION ASTM A 615. ALL REINFORCING STEEL TO BE NO. 4 BARS.
- 7. THE COST OF EXCAVATION BELOW LEVEL ON PROPOSED SLOPE TO BE INCLUDED IN THE COST OF OTHER ITEMS.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCALE:

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STANDARD CONCRETE STEPS AND PIPE HANDRAILS DETAILS							600	60-(3	0,31,128)-1	MADISON/ST. CLAIR	399	240					
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